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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/766,636	01/23/2001	Alan K. Gorenstein	38188-382	8377

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EXAMINER
LE, KHANH H

ART UNIT	PAPER NUMBER
2162	9

DATE MAILED: 02/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/766,636	GORENSTEIN, ALAN K.	
	Examiner	Art Unit	
	Khanh H. Le	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Objections to specifications

1. Pages numbers are missing. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 2-4, 14-15, 19-21 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 2-4, 14-15, all drawn to "composite scores which indicate variance" are not supported by specifications in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 19-24 which parallel claims 2-4 are rejected on the same basis.

Applicants are to point out specifically the enabling support . The scant support found by the Examiner is deemed insufficient to allow one skilled in the arts to practice the invention without undue experimentation.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 2-4, 14-15 , 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2:
It is unclear what the second composite score which indicates variance among the population consists of. Appropriate correction is required.

Claims 3 and 4, dependent on claim 2 are rejected on the same basis

Claim 14. "..., wherein the third composite score determines variance among the sets of scores ..." It is unclear what the third composite score which indicates variance...consists of. Appropriate correction is required.

Claim 15, dependent on claim 14 is rejected on the same basis.

Claims 19-24 which parallel claims 2-4 are rejected on the same basis.

Claims rejections. 35 U.S.C. 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-21 are rejected under 35 U.S.C. 103 (a) as being unpatentable "Equifax launches Thin Rank, a Risk Model to Rank Order All Consumers" PR Newswire, p6844, April 7, 2000, Dialog File 621 # 02449611, hereinafter the Equifax article in view of Mastering Data Mining, The Art and Science of Customer Relationship Management by Michael J.A. Berry and Gordon S. Linoff, 2nd edition, John Wiley and Sons, copyright 2000, pp 213-225, hereinafter the Mastering Data Mining article.

Claim 1.
The Equifax article discloses segmenting a population based on " advanced statistical techniques combining multiple models..." in which the consumers are rank ordered as credit risks.

Thus the Equifax article discloses

A method for segmenting("separated into categories", "rank-order") members of a population of members (second paragraph), comprising the steps of:
running more than one segmentation strategy against a population to generate for each strategy (combine generating a first composite score ("resulting numeric score") for each population member by combining each of the scores for that member from each of the more than one segmentation strategy (inherent) ; and
segmenting the population according to the generated first composite scores. ("separated into categories", "rank-order" ;last sentence, fourth full paragraph)

Further the Mastering Data Mining article provides the rationale that combining multiple models yields better results (p 213-214, Fig 7.16) .

Thus one skilled in the arts form the disclosures of the two references as discussed above would have known to combine the two to arrive at the claimed invention.

Claim 2.
The method according to claim 1, further comprising the step of:
generating a second composite score, different than the first composite score, for each population member, wherein the second composite score indicates variance among the population;

It is interpreted that the second score, for each model, and for each population member, may be , e.g., the member's score minus the standard deviation (a well-known statically measure, indicating variance among the population) (see e.g. the Internet Glossary of Statistical Terms , http://www.animatedsoftware.com/statglos/statglos.htm, defining variance and other statistical terms).

The Equifax articles discloses combining several models and segmenting based on a resulting numeric score. It is further known generally that combining models results enhances the results (see e.g.
Mastering Data Mining, full cite below, p. 213-214 , Fig 7.16) . Further it is known that using a score that indicates variance among the population allows further characterization of the segment.

From all those disclosures and general knowledge in the art, as discussed,
it would have been obvious to one skilled in the arts to calculate a second composite score, for each member, across the models, based on such well-known statistical measure as discussed above, to further distinguish the segment from the population and to enhance the results by models combination .

Claim 3:
"The method according to claim 2, further comprising the step of:
generating an overall score for each population member by combining the first and

second composite scores; and
segmenting the population according to the generated overall score."

Segmenting based on scores is disclosed by the Equifax article. Combining two or more scores as a method for obtaining a more reliable number is a well-known calculation method. One example would have been ,for one student, calculating a grade point average across several instructional subjects, to measure the overall proficiency of the student. It is well-known the more measures obtained the better the measured object can be characterized.

Thus one skilled in the arts would have known to combine two composite scores, obtained over combined models, to take advantage of the general knowledge that more scores /models yield better measuring results.

Claim 4
The method according to claim 3, further comprising the step of:
forwarding marketing material to a selected portion of the segmented population.

It is admitted in the specifications that segmenting methods for consumers targeting is well known. Thus one skilled in the arts would have known to use the method as discussed in claim 3 to forward targeted material to selected portions of a segmented population.

Claim 5.
A method for segmenting members of a population of members, comprising the steps of:
running more than one segmentation strategy against the population to generate for each strategy a score for each population member;
determining a set of scores for each population member, wherein the set of scores for a particular member comprises the score for that particular member from each of the more than one segmentation strategy;
generating for each population member a first composite score based on that member's set of scores; and
ranking the population members, in accordance with the first composite scores, into a first ranked list.

This claim parallels claim 1, disclosed as above, with the addition of ranking the members which is also disclosed by the Equifax article.

Claim 6. The method according to claim 5, further comprising the step of: selecting a portion of the population to receive marketing material based on the first ranked list.

The additional limitation parallels that of claim 4 and is rejected on the same basis.

Claim 7. The method according to claim 5, further comprising the steps of:
identifying a plurality of segmentation strategies;

performing lift table analysis on each of the plurality of segmentation strategies; and

selecting a subset of the plurality of segmentation strategies based on the lift table analyses, wherein the subset comprises the more than one segmentation strategy run against the population.

It is admitted in the specifications that the lift table method to select segmentation strategies is prior art. It would have been obvious to one skilled in the arts to combine the method of claim 5 as discussed above with the admitted art so as to keep only the most promising modeling strategies yet still retain the enhanced results from combining more than one modeling strategies such as taught by the Equifax article.

Claim 8. The method according to claim 5, wherein the first composite score for each population member is an average of that member's set of scores.

The Equifax article does not explicitly teach the resulting numeric score is an average but the Data Mining articles, which also teaches combining models, at pp. 213-219, discloses an average composite score, at p.216, 3rd full paragraph. Thus one skilled in the arts would have known to combine the teachings of the Equifax article with the Data Mining article to implement a simple way of measuring a composite score.

9. The method according to claim 8, wherein the average is a weighted average.

The Equifax article does not explicitly teach the resulting numeric score is based on a weighted average but it is well-known weighted averages are simple ways of measuring. Thus one skilled in the arts would have known to combine the teachings of the Equifax article with a weighted average to implement a simple way of measuring a composite score.

Claim 10. The method according to claim 5, further comprising the step of: generating for each population member a second composite score, different than that member's first composite score, based on that member's set of scores.

The additional limitation parallels that of claim 2 in broader terms and thus is rejected on the same basis.

Claim 11.(" The method according to claim 10, wherein the second composite score for each population member is based on an ANOVA comparison of the sets of scores.

The ANOVA technique is a well-known and popular technique and the F score which is part of the ANOVA calculation is also well-known. One skilled in the art would have known to use the F score as a composite score across the modeling strategies , for each population member, to distinguish the segment (by comparison of variances) , as generally well-known in the art and at the same time to capitalize on the enhanced benefits of models combining as taught by the Equifax article.

Claim 12. The method according to claim 10, further comprising the steps of:
generating for each population member an overall score based on the first and second
composite scores for that member; and
ranking the population members, in accordance with the overall scores, into a second
ranked list.\

Combining models give better results (Equifax article, Data Mining article) . It is further obvious to combine two scores for each member for enhanced results (see claim 3). Ranking as a method for segmenting g is known. The Equifax article.

The additional limitation of this claim essentially parallels that of claim 3 and is rejected on the same basis.

Claim 13. The method according to claim 12, further comprising the step of: selecting a portion of the population to receive marketing material based on the second ranked list.

The additional limitation parallels that of claim 4 or 6 and is rejected on the same basis.

Claim 14. (The method according to claim 10, further comprising the step of:
generating for each population member a third composite score based on the sets of scores, wherein the third composite score determines variance among the sets of scores differently than the first and second composite scores.)

The additional limitation regarding the composite score determining variance parallels that of claim 2 and is rejected on the same basis. The additional limitation regarding a third composite score is rejecting on the same basis as that of claim 3, based on the known principle that the more measures obtained the more accurate the resulting measure/score.

Thus one skilled in the arts would have found it obvious to add another third measure to make the results even more accurate.

Claim 15.(The method according to claim 14, further comprising the steps of:
generating for each population member an overall score based on at least two of the first, second and third composite scores; and
ranking the population members in accordance with the overall scores, into a second ranked list.)

As to claims 15 and 16, it is obvious to one skilled in the arts to have as many scores as desired on the known and above-discussed principle of combining the scores for greater measurement accuracy (see claim 3).

Claim 16. A method for compositely segmenting members of a population, comprising the steps of:

running more than one segmentation strategy against the population to generate for each strategy a score for each population member;

for each of the more than one segmentation strategy, assigning a rank to each population member according to the scores for that segmentation strategy;

determining for each population member a set of ranks, wherein the set of ranks for a particular population member comprises the assigned rank for that particular member from each of the more than one segmentation strategy;

generating a first composite score for each population member by averaging the set of ranks for that member;

assigning a first composite rank to each population member in accordance with the first composite scores;

generating a second composite score for each population member based on an ANOVA comparison of the sets of ranks; assigning a second composite rank to each popula second composite scores;

generating an overall score for each population member by averaging the first and second composite ranks for that member; and

ranking the population according to the overall scores.

Claim 16 is a combination of claims 5, 11, and 12, and thus is rejected on the same bases.

Claim 17. The method according to claim 16, further comprising the step of:

selecting a portion of the population as ranked in accordance to the overall score.

The Equifax article discloses segmentation by ranking thus it would have been obvious to use the method of claim 16 as disclosed above to rank and segment.

18. A computer readable medium bearing instructions for segmenting members of a population of members, said instructions being arranged to cause one or more processors upon execution thereof to perform the steps of:

running more than one segmentation strategy against a population to generate for each strategy a score for each population member;

generating a first composite score for each population member by combining the scores for that member from each of the more than one segmentation strategy; and

segmenting the population according to the generated composite scores.

Claim 18 parallels claim 1 in computer readable medium format and is ejected on the same basis. Claim 18-21 parallel claims 1-4 in computer readable medium format and are rejected on the same basis.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Equifax launches Thin Rank, a Risk Model to Rank Order All Consumers" PR Newswire, p6844, April 7, 2000, Dialog File # 02449611, (File 621)..." Using Thin Rank, a new, unique model is developed for each Equifax
customer, based on the customer's objectives. It can rank order never pay, write off, voluntary or involuntary churn -- whatever meets the customer's needs. Advanced statistical techniques combine multiple models, multiple predictive non-credit databases and the company's performance data to rank order the degree of risk for the population of consumers with non-existent, thin or missing credit files. The resulting numeric score can indicate necessary action, such as increasing the level of service provided, decreasing deposit requirements, or asking for additional ID information."

Mastering Data Mining, The Art and Science of Customer Relationship Management by Michael J.A. Berry and Gordon S. Linoff, 2nd edition, John Wiley and Sons, copyright 2000, pp 213-225
Discloses combining multiple models yields better results (p 213-214, Fig 7.16)
combined modeling on all input data (pp213, p216 , and,
a combined score based on variance (p. 216, 4th full paragraph, using "statistics"; Fig 7.17: " evidence with a confidence")
averaging the scores for the combined score, across the models (p. 216, 3rd full paragraph).

PCT Wo0034889 discloses scoring each segment , weighted average computation of scores .

* PCT WO 01/06405 (Pub date: 01/25/2001, priority to US Patent application 09356191 filed 16/99) discloses multiple models (each model rep. a product) , scoring of members of a population, ranking the scores among the models/member so to market the most promising product and who to market to. For each model, the members are scored (based on prob. for purchasing)then segmented (sorted), then mail to the most promising members. For each model (product) a combined score (average , based on scores of each consumer) is calculated.

"Marketing research: A state of the art review and directions for the twenty first century" by Malhotra, Naresh K and others, Journal of the Academy of Marketing Science, v 27n2 pp 160-183, Spring 1999, Dialog File 15, # 01795363 discloses ANOVA techniques and other marketing research methodologies.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh H. Le whose telephone number is (703) 305-0571. The examiner can normally be reached on Tues-Wed from 9:00 AM – 6:00 PM. The examiner can also be reached at the e-mail address: khanh.le2@uspto.gov

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Stamber, can be reached on (703) 305-8469. Facsimile transmissions to this Group (TC 2100) may be directed to :

After-final	**(703) 746-7238**
Official	**(703) 746-7239**
Non-Official/Draft	(703) 746-7240

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900 .

February 19, 2002
KHL

Steve Gravini

STEPHEN GRAVINI
PRIMARY EXAMINER